

REMARKS

Claims 1-21 are currently pending and at issue in this application. Independent claims 1, 13, and 20 have been amended to more explicitly define the invention. No new matter has been added by these amendments. Applicants respectfully request reconsideration of the claims and favorable action in this case.

Response to Rejections of the Claims at Issue

Applicants respectfully traverse the rejection of claims 1-11, 13-15, 17, and 19-21 under 35 U.S.C. § 102(b) as anticipated by Roth et al. DE 199 60 330 A1 (U.S. Pat. No. 6,361,018 used for translation) (Roth), and under 35 U.S.C. 103(a) as obvious over Roth in view of U.S. Pat. No. 2,454,160 to Green (Green). Additionally, Applicants respectfully traverse the rejection of claims 1-6 and 8-21 under 35 U.S.C. §102(b) as anticipated by U.S. Pat. No. 6,116,571 to Hettinger (Hettinger), and under U.S.C. 103(a) as obvious over Hettinger in view of Green. Reconsideration and withdrawal of these rejections is respectfully requested in light of the remarks provided below.

Each of claims 1-12 recites a sleeve valve comprising a valve plug having a first end portion including an upstream flow directing surface, the first end portion being removably mounted to a part of the valve plug and an alternative second end portion from a plurality of end portion options, wherein the second end portion replaces the first end portion to change at least one performance or flow characteristic of the sleeve valve. Additionally, each of claims 13-19 recites a method of adjusting at least one performance or flow characteristic of a sleeve valve having a valve body including a valve plug from a part of the valve plug, the method including removing at least a first end portion, selecting an alternative second end portion from a plurality of end portion options, and removably installing the second end portion. Lastly, each of claims 20-21 recites an adjustable sleeve valve kit comprising a valve having a valve body, a part of a valve plug, and a plurality of selectively interchangeable valve plug end portions each being removably attachable to the valve plug part to change at least one performance or flow characteristic of the sleeve valve, and each having an upstream flow directing surface.

Contrary to the Examiner's contentions, none of Roth, Hettinger, or Green discloses or suggests a sleeve valve having a valve plug including a first end portion comprising an upstream flow directing surface, the first end portion being removably mounted to a part of the valve plug, and an alternative second end portion from a plurality of end portions that

replaces the first end portion to change at least one performance or flow characteristic of the sleeve valve, as recited in claims 1-12. Also, none of Roth, Hettinger, or Green discloses or suggests a method of adjusting at least one performance or flow characteristic of a sleeve valve including removing at least a first end portion having an upstream flow directing surface, selecting an alternative end portion from a plurality of end portion options, and removably installing the second end portion, as recited in claims 13-19. Also, none of Roth, Hettinger, or Green discloses or suggests a sleeve valve kit having a plurality of interchangeable valve plug end portions each being removably attachable to the valve plug part to change at least one performance or flow characteristic of the sleeve valve, as recited in claims 20-21.

As a result, the valves disclosed in each of Roth, Hettinger, and Green are subject to the same problems discussed with respect to the known prior art, i.e., having considerable time, cost, and labor involved in repairing or replacing a valve plug or changing a performance characteristic of a sleeve valve, as an entire valve assembly must be removed and replaced just to repair or replace a valve plug or change a performance or flow characteristic of a valve sleeve. See, e.g., page 2 of the present application.

Thus, none of Roth, Hettinger, or Green anticipates or renders obvious any of the claims at issue.

Roth

In particular, while Roth discloses a coaxial valve with an electric actuating drive, the Roth valve does not include an alternative second end portion that replaces a first end portion, much less an alternative second end portion that replaces the first end portion to change at least one performance or flow characteristic of the sleeve valve, as recited in independent claim 1, for example. The Office Action recognizes this fact, for example, on page 5: "Roth lacks disclosing that a second end portion is available."

Further, Roth does not disclose a first end portion or any portion of a valve plug "having an upstream flow directing surface," as recited in all pending claims. Applicants respectfully submit that, contrary to the Examiner's statement on page 2 of the Office Action, Roth does not disclose or suggest a first end portion of a valve plug having an upstream flow directing surface "towards inlet E." Rather, Fig. 1 of Roth shows that a portion of a "closing body 13" of the valve has a downstream flow, as it faces the outlet A. Thus, this portion of the closing body 13 has a downstream flow directing surface, which may be significant in that replacing what appears to be a portion of the closing body 13 would not necessarily

change the same flow or performance characteristics of the sleeve valve recited in the pending claims.

Moreover, because the valve in Roth does not disclose an alternative second end portion to replace a first end portion of a valve plug, or a valve kit or method relating to the same, it involves the same problems described in the application at issue, namely having considerable time, cost, and labor involved in repairing or replacing a valve plug or changing a performance characteristic of a sleeve valve, as an entire valve assembly must be removed and replaced just to repair or replace a valve plug or change a performance or flow characteristic of a valve sleeve. Instead, Roth discloses coaxial valves for use in shutting off a liquid or gaseous medium under extreme conditions, for example, in propulsion of aircraft and spacecraft. In describing some problems of prior art valve sleeve configurations for such applications, Roth explains, for example, that such known arrangements have "an inherent danger" that valve sleeves "may jam in the coaxial valve" or may require an increased amount of power. See, e.g., col. 1, line 66 - col. 2, line 36. As such, Roth provides an improved control valve "in particular for cryogenic and aggressive rocket fuels, having a drive that is not located in the conveyed flow medium" and "arranged so as to be largely thermally decoupled" and "consuming as little power as possible." See col. 2, lines 38-48.

Hettinger

In a similar manner, Hettinger does not disclose or suggest a valve having a valve plug with an alternative second end portion that replaces a first end portion, much less an alternative second end portion that replaces the first end portion to change at least one performance or flow characteristic of the sleeve valve, as recited in independent claim 1, for example. The Office Action further recognizes this fact, for example, on page 5: "Hettinger lacks disclosing that a second end portion is available." Specifically, Hettinger does not disclose or suggest a sleeve valve, a sleeve valve kit, or a method of adjusting at least one performance or flow characteristic of a sleeve valve having a valve plug that includes a first end portion and an alternative second end portion that replaces the first end portion or a plurality of selectively interchangeable valve plug end portions, let alone one being used in an apparatus or method or kit specified in any of the pending claims at issue.

While Hettinger discloses a straight valve, it discloses a straight valve having a drive component arranged outside the media flow, thereby, for example, allowing the *drive unit* to be exchanged or replaced in a short time without having to interfere with the fluidic part of the linear valve. See, e.g., col. 1, lines 17-30; see also col. 1, lines 10-16 (the problems

Hettinger addresses relate to long downtimes and, thus, associated costs, involved in the maintenance or repair of *a drive unit* of a linear valve, as in prior art valves the linear valve had to be entirely removed from the media circuit to replace the electric and piston drive, respectively): It does not disclose or suggest a valve having an alternative second portion of a valve plug that replaces a first end portion of the valve plug, as recited in all pending claims. Thus, the valve disclosed in Hettinger does not solve the valve problems addressed by the pending claims in the present application, namely having considerable time, cost, and labor involved in repairing or replacing a valve plug or changing a performance characteristic of a sleeve valve, as an entire valve assembly must be removed and replaced just to repair or replace a valve plug or change a performance or flow characteristic of a valve sleeve

Green

Still further, while Green discloses a valve having a valve stem, valve head, and valve seat, Green does not disclose or suggest a valve having a second end portion of a valve plug that replaces a first end portion to change or adjust at least one performance or flow characteristic of a sleeve valve, or a method relating to the same, as recited in claims 1-12, and 13-19, respectively. Nor does it disclose or suggest a sleeve kit having a plurality of interchangeable valve plug end portions each being removably attachable to the valve plug part so as to change at least one performance or flow characteristic of the sleeve valve, as recited in claims 20-21.

In fact, the Green valve is a "corrosive resisting valve" that is rendered "substantially non-corrosive by the use of materials capable of resisting chemical attack, for the purpose of meeting the severe requirements of fields involving the use of acids and other chemicals tending to corrode metallic materials." See col. 1, lines 1-6. Thus, the valve of Green includes "parts exposed to chemical attack made of materials having the chemical resistance of ceramic compositions, but the body portion or housing made with sections of substantially uniform and practicable thickness and having the strength of metal materials." See col. 1, lines 33-40. In Green such objectives are met, for example, by having "a valve head readily fitted with seating *rings* of various materials to adapt it to various uses," see col. 10, lines 37-40 (emphasis added).

While the Examiner refers to portions 20, 70, 75, and 93 of the valves disclosed in Figs. 1, 3, 7, and 9, respectively, as different valve seats that change a performance or flow characteristic of the valve on page 5 of the Office Action, portions 20, 70, 75, and 93 are in fact sealing rings (see, e.g., col. 1, line 59 "annular ring 20", col. 7, line 56 "valve seat ring

70,” col. 7, lines 73-75, “a porcelain seat ring 75,” and col. 8, line 37-38, “a porcelain seat ring 93”). Thus, it is the sealing rings, and not valve seats per se (much less an end portion of a valve plug having an upstream flow directing surface) that may be adapted to various uses depending upon the material selected for the particular ring. This is unlike the claims of the present invention that all recite a valve having a valve plug including a first end portion and an alternative second end portion that replaces the first end portion, much less a second end portion that replaces the first end portion to change a flow or performance characteristic of the sleeve valve, as recited in the apparatus and method claims of the present invention.

As a result, Green’s problems do not specifically relate to valves having adjustable flow characteristics and a method of adjusting the flow characteristics of such a valve. Instead, Green relates to providing a corrosive resisting valve that solves the problems of prior art valves at or around 1943, the time of filing the Green application, namely corrosive valve materials used in valve designs having limited strength in compression, resulting in brittle construction, and, thus, related valve designs that are too heavy and cumbersome. See, e.g., col. 1, lines 1-32.

None of Roth, Hettinger, or Green discloses or suggests the sleeve valve, sleeve valve kit, or related method of adjusting at least one performance or flow characteristic of a sleeve valve of the pending claims, and not all the limitations of the pending claims are taught by the combinations cited. Applicants also respectfully submit that it would not have been obvious to one of skill in the art at the time the invention was made to modify either Roth’s or Hettinger’s valves with Green’s different valve rings in a sleeve valve or valve of a sleeve valve kit to change at least one performance or flow characteristic of the sleeve valve, or for a method of adjusting at least one performance or flow characteristic of a sleeve valve. See In re Mills, 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990); In re Gordon, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984) (“The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.”).

Conclusion

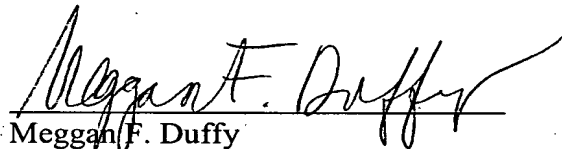
It is clear that the prior art must disclose each and every limitation of a claimed combination and must additionally make a disclosure of or a suggestion of a motivation for combining those elements in order to establish a prima facie case of obviousness. See In re Vaeck, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); see also M.P.E.P. § 2143 (8th ed. Rev. May 2004).

As a result, none of this art, either taken alone or in combination, renders any of the pending claims anticipated or obvious. As the independent claims are neither anticipated nor rendered obvious by any of the cited references for the reasons explained above, the dependent claims are also neither anticipated nor rendered obvious. For the reasons provided above, Applicants respectfully request withdrawal of the rejections and allowance of the claims at issue in this application.

If the Examiner believes that a discussion with the Applicants' attorney would be beneficial or would assist in advancing this case toward allowance, the Examiner is respectfully requested to call the Applicants' undersigned attorney at his convenience.

This paper is timely filed within one month after the three-month response date of October 12, 2005, as it is being mailed with a certificate of mailing on November 14, 2005, the first business day after the one month extension of time period after the three-month response date, and a Petition for Extension of Time (one month). Applicants also hereby authorize the Director to charge Deposit Account No. 13-2855 in the amount of \$120.00 to cover the Petition fee set forth in 37 C.F.R. § 1.17(a)(1) and any fee deficiency associated with the filing of this paper, under order no. 06005/37296 from which the undersigned is authorized to draw.

Respectfully submitted,



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